Knee OA prevalence in 2017 was calculated as the number of patients with a knee OA diagnosis divided by the total number of patients with continuous enrollment in 2017. The Deyo-Charlson Comorbidity Index (DCI) was used to assess patients’ overall burden of disease.

All-cause (knee-OA-related) as well as other medical and pharmacy claims and knee-OA-related (any claim with a diagnosis of knee OA) healthcare utilization and costs were measured during the follow-up period.

Number of patients prescribed medications commonly used for pain alleviation among knee OA patients (corticosteroids [any form], hyaluronic acid, NSAIDS, and longer-term opioids [> 30-day supply]) and their costs were assessed in the follow-up period.

The cost of medications was estimated by multiplying the average acquisition cost of each medication by the number of days’ supply dispensed. The costs of medications were adjusted for inflation to 2017 dollars using the Medical Care component of the U.S. Bureau of Labor Statistics indexing.

Costs were estimated as per patient-per-year (PPPY) to account for the variable-length follow-up period.

Categorical variables were summarized with counts and percentages; continuous variables were summarized with mean and standard deviations.

Methods

• The IBM Watson Health MarketScan® Research Databases from 2013-2016 were used to identify knee OA patients (Figure 1).

• Knee OA prevalence in 2017 was calculated as the number of patients with a knee OA diagnosis divided by the total number of patients with continuous enrollment in 2017.

• The Deyo-Charlson Comorbidity Index (DCI) was used to assess patients’ overall burden of disease.

• All-cause (knee-OA-related) as well as other medical and pharmacy claims and knee-OA-related (any claim with a diagnosis of knee OA) healthcare utilization and costs were measured during the follow-up period.

• Number of patients prescribed medications commonly used for pain alleviation among knee OA patients (corticosteroids [any form], hyaluronic acid, NSAIDS, and longer-term opioids [> 30-day supply]) and their costs were assessed in the follow-up period.

• Costs were estimated as per patient-per-year (PPPY) to account for the variable-length follow-up period.

• Categorical variables were summarized with counts and percentages; continuous variables were summarized with mean and standard deviations.

Results

Figure 2. PPPY All-Cause and Knee-OA-Related Healthcare Costs

Figure 3. Medication-Specific Costs Among Patients Prescribed Medication in the Variable-Length Follow-Up Period

Conclusions

• Healthcare utilization is frequent among knee OA patients with > 90% having outpatient visits and pharmacy claims.

• The PPPY healthcare cost of knee OA is substantial, making up almost a third of all-cause costs.

• A considerable percentage of patients received longer-term opioids.

• Humanistic and economic considerations in terms of societal and financial burden of knee OA in relation to other chronic pain conditions warrant further research to evaluate the significance of these findings.

Limitations

• Patients with knee OA often seek over-the-counter pain relief prior to seeing healthcare providers and/or receiving prescription medication; therefore, the true cost of the disease is likely to be underrepresented by claims.

• As with all claims data, there is a potential for misclassification from diagnostic coding errors, potentially resulting in misclassification of knee OA status, comorbidity burden, and study outcomes.

References


All authors are employees, shareholders, or consultants of Samumed, LLC.

An Analysis of the Burden of Illness and Treatment in Knee Osteoarthritis in a U.S. Administrative Claims Database

Bonafeede M1, Vlahiotis A1, Bedenbaugh AV2, Lee VC2, Tambiah J2

1 IBM Watson Health, Cambridge, MA; 2 Samumed LLC, San Diego, CA

9381 Judicial Drive, San Diego, CA 92121
info@samumed.com